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ELEMENTS OF FOSSILOGY*:

OR, AN

ARRANGEMENT

OF

FOSSILS,

INTO

CLASSES, ORDERS, GENERA,

and SPECIES;

WITH

Their CHARACTERS.

By GEORGE EDWARDS, Eſq;

Fidem non derogat error.

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MDCCLXXVI.

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* *IT is a rule of grammar, that no compound word is to be formed of other words, which are of different languages: the terms* Foſſilogy *and* Minerology, *are a violation of this rule; but we beg leave to make uſe of one of theſe terms rather than invent a new one, and we prefer the former to the latter.*

E R R A T A.

Ubique Quartzoze, r. Quartzoſe.
Inflamable, r. Inflammable.
Arſnic, r. Arſenic.
Marmoroproſeron, r. Marmaroproſeron.
Dilineate, r. Delineate.

P. l.
12 20 Verdatre, r. Verditer.
14 4 Gaodæ, r. Geodæ.
24 12 Section 1. r. before Sp. 1.
28 18 Coyrynthia, r. Corynthia.
29 23 Ireland, r. Iceland.
32 21 Strated, r. Striated.
33 23 Cruſtrated, r. cruſtated.
35 20 Hyacynth, r. Hyacinth.
44 10 Flus, r. Fluſs.
46 14 Cloſeſly, r. Cloſely
47 18 Eruciformis, r. Ericiformis.
52 5 Contentric, r. concentric.
52 6 Surounding, r. Surrounding.
54 13 Ophitis, r. Ophites.
72 20 Zins. Bicmuth. r. Zinc, Biſmuth.
79 ☞ Dele paragr. 8th.

To the READER.

WE confeſs with this early opportunity, that many faults may be obſerved in the following treatiſe, written upon a ſcience, which is involved in more error and obſcurity than any other; meaning to anticipate divers cenſures, by allowing them to be juſt. The method, which we follow, not unfrequently is new, and therefore, although it ſhould be a juſt one, cannot be brought to perfection, and eſtabliſhed free of errors by a ſingle hand. As our plan of arrangement, and the ſources from which we draw the characters of foſſils and their arrangements, do not coincide with thoſe made uſe of by authors, many foſſils they have recorded on this account cannot be deſcribed, and are in the preſent treatiſe omitted. Theſe and many other reaſons might be offered, why we are not aſhamed in owning this treatiſe to be imperfect; but we propoſe, after a period of years, to republiſh this book more perfect, and enriched with a great number, and a more minute account of individual foſſils, if we have the opportunity of ſeeing, by means of our friends, a ſufficient number of ſpecimens; which favour we ſhall moſt faithfully acknowledge.

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ELE-

FOSSILOGY

AND ITS

PRINCIPLES.

FOSSILOGY is a ſcience, teaching, by the means of method and characters, the knowledge of the different bodies, which are found in the earth, and which have neither animal nor vegetable origin. This definition excludes from Foſſilogy the conſideration of foſſil bodies, which owe their figure and appearance to vegetable and animal bodies, and which many foſſiliſts, from their great good nature have taken under their ſpecial protection.

The foſſil bodies found in the earth, are very numerous, and the means of knowing and ſeparately diſtinguiſhing them are not obvious. Therefore, in treating of them, a proper method,

thod require it, and that Foſſilogy would be lame, confuſed, and very imperfect, if it wanted this diviſion. We muſt add in vindication of this Treatiſe, that it does not engage to treat of the diviſion of individual Foſſils.

The choice of characters to note, arrange, and to deſcribe the ſeveral diviſions made in Foſſilogy, is an object of the greateſt conſequence. They ſhould be drawn from the moſt ſteady principles, and determined with all the preciſion in our power. We draw them chiefly from the following ſources, from Chymiſtry, Structure, Figure, Colour, and the degree of hardneſs of foſſil bodies. Chymiſtry affords foſſilogical characters, which are clear, certain, and of the greateſt and moſt extenſive utility; it forms Foſſilogy into a more philoſophical ſtudy; and on many occaſions its aſſiſtance is indiſpenſably neceſſary. Yet its application may and has been too far extended; and, when it exceeds certain bounds, it renders Foſſilogy abſtruſe, leſs uſeful, complicated, and laborious. The ſtructure or texture of foſſil bodies frequently is of great ſervice in ſupplying uſeful and valuable foſſilogical characters, and is never to be diſregarded. The figure of foſſil ſubſtances cannot be too much attended to. Colour at firſt view may appear vague, and unſufficient to afford proper characters; but in characteriſing and deſcribing the ſpecies and individuals of foſſil bodies, colours are of the greateſt ſervice, and deſerve the moſt careful conſideration. The difficulty of fixing upon proper names to expreſs them, may be got over by paying attention, which never yet has been done, properly to know and diſtinguiſh colours, and by finding out various colours, which are uniformily and conſtantly obſerved in the works of nature, and which bear a reſemblance to the colours of foſſil bodies, and comparing them together. Greater diligence and ſtrictneſs in the application of names to colours, may render them very ſerviceable in Foſſilogy: and cenſures thrown out againſt their uſe, frequently are not ſo juſt as they are ſpecious. The degree of hardneſs of foſſil bodies not ſeldom is of great importance in affording proper foſſilogical characters. There are many particular obſervations, relative to the application of characters drawn from the above ſources. Structure is of four kinds: 1. The Solid Structure, in which no granules or particles are preſent, although a foſſil body of a ſolid ſtructure may be compoſed of ſeveral pieces, and yet not be on this account of a different ſtructure. 2. The Granulated. 3. The Fibrous. 4. The Laminated; which conſiſts of laminæ of different ſizes and extent, and which ſometimes can only be ſaid to be ſcaley: the ſtructure of the laminæ is either ſolid or granulated; and their thickneſs greatly varies. Theſe four different ſtructures are well marked in nature, and may be depended upon as proper characters to deſcribe and diſtinguiſh the methodical diviſions and the individual foſſils, which occur in Foſſilogy. Yet a little obſcurity and doubt in aſcertaining proper foſſilogical characters, will ſometimes occur in examining this as well as the other ſources from which we draw them: thus the different ſtructures may ſometimes be blended together; one ſtructure may not be ſufficiently diſtinguiſhed and ſeparated from another; a few granules may be mixed in a foſſil of a real ſolid ſtructure: but a proper and accurate examination, and the fixing upon that ſtructure, which is moſt predominant, will remove all ſuch doubts and difficulties. The figures of foſſil bodies are many and various, but only thoſe, which are regular and determinate, can be admitted: ex. gr. a quartzoze chryſtal of a round ſhape frequently occurs, which we ſhall not conſider as a figured body, ſince its figure is very different from a perfect one; for inſtance, one, which is ſpherical. Several pages might be written upon the cautions and niceties, which are to be obſerved in making uſe of colours, as foſſilogical characters; but we ſhall ſcarce offer more than one obſervation, which is relative to the colours of metals. There is a colour frequently occurring in metals and their ores, which has yet never been named. It is not blue, it is not white, nor is it black. Its different ſhades ſometimes nearly approach to the different ſhades of the three colours above mentioned, but they really are perfectly diſtinguiſhed and ſeparated from them. This colour, which we ſhall diſtinguiſh, and call the unnamed colour of metals, is preſent in lead, whoſe colour cannot be ſaid to be black, blue, or white. From the great application it admits of, and from the neceſſity of making uſe of it, we ſhall eſtabliſh this colour in the manner above propoſed, when we come to treat of metals and their ores. The unnamed colour of metals on expoſure to the air frequently becomes tarniſhed, but reappears upon cutting afreſh, as we frequently ſee in the glaſs copper ores; and the ſhades of it, like the other colours of metals, are many and various. All the colours of metals have ſomething peculiar and diſtinct from the ſame in other foſſil bodies, which particularity may be called metallic. When we uſe the term colourleſs, the body, to which it is applied, muſt always be underſtood to be tranſparent; and a purple colour is brought under a blue one. We ſhall draw our foſſilogical characters from the ſeveral ſources, that afford them, accordingly as theſe are beſt ſuited to the aſcertaining, arranging and deſcribing of the ſeveral methodical diviſions and and individual foſſils, which occur in Foſſilogy. Yet there never will exiſt a ſyſtem of Foſſilogy, eſtabliſhed upon arrangements, and theſe denoted with characters, both of which are ſo juſt, ſo applicable to nature, and ſo univerſal, that every ſingle individual can be referred to and manifeſted by them; but the ſimilarity of a ſingle foſſil, whoſe place and character is doubtful and not manifeſted,

feſted, with the foſſil bodies, to which it is intimately allied, and whoſe place and character is well known, or its poſſeſſing in part the characters that denote its place, will infallibly lead it to its proper home. Ex. Gr. There is an agate, which is of a red colour, but, being opaque, will not anſwer to the character given of agate; yet I perfectly know both it and its place, from its ſimilarity to other foſſil bodies which anſwer to the character of agate: or, if this teſt is not ſufficient, I hold it to the light, and diſcern in it many ſpots, which perfectly correſpond to the character of Agate, and therefore no doubt can remain concerning it. The reader muſt always be aware, that in each and every character of all the methodical diviſions which we have eſtabliſhed, there is, cæteris paribus, ſomething peculiar and diſtinct from all other characters, which diſtinguiſhes one claſs, one order, one genus, one ſpecies, and one individual from all other claſſes, orders, genera, ſpecies, and individuals; but in an expreſs manner to compare, and verbatim to point out the diſtinctions between theſe, would be an endleſs taſk, and generally may as well be omitted in toto, as in parte.

The CLASSES and ORDERS

OF

FOSSILOGY.

Claſs I. Earths.

Claſs II. Stones.

Order I. Calcareous ſtone.
Order II. Quartzoze ſtone.
Order III. Fluor.
Order IV. Gypſum.
Order V. Stone of a ſolid ſtructure, named Petra.
Order VI. Stone of a granulated ſtructure, named Saxum.
Order VII. Stone of a laminated ſtructure, or laminated Stone.
Order VIII. Stone of a fibrous ſtructure, or fibrous Stone.
Order IX. Stone, compoſed of a matter, which is not gritty; or gritleſs Stone, if we may be allowed to adopt the term gritleſs.
Order X. Stones eſſentially conſiſting of more kinds of Stone than one; or compound Stones.

Claſs III. Inflamables.

Claſs IV. Metals.

Claſs V. Cryptometalline foſſils.

Order I. Cryptometalline Stones.
Order II. Cryptometalline Earths.
Order III. Cryptometalline Flos.

Claſs VI. Salts.

Order I. Acids.
Order II. Alkalies.
Order III. Metallic neutral Salts.
Order IV. Earthy neutral Salts.
Order V. Alkaline neutral Salts.

Claſs I. Earths.

Ch. Foſſil bodies, whoſe component parts imbibe water; and which either fall into a looſe maſs, or, when gently rubbed between the fingers, are diviſible, after they have been ſoaked a ſufficient length of time in water.

N. B. Both earths and ſtones are in chymiſtry termed earths; but that they ſhould be ſeparated, and diſtinguiſhed by name is abſolutely neceſſary in Foſſilogy; therefore, accordingly as foſſil bodies anſwer to the definitions given by us of earths and ſtones, we ſhall conſider, and name them as ſuch. The ochres are excluded from this claſs, and referred to that of the Cryptometalline foſſils.

There often are heterogeneous matters mixed in ſmall quantities with the foſſil bodies of this claſs: thus a ſmall portion of ſand is often found in clay; but this circumſtance is only accidental, nor is it of ſuch importance, as to affect the Genera.

Genus I. Clay.

Character. An earth ſoft, very ductile, and tenacious, when moiſt; and rendered very hard by fire.

Sp. I. Of a white colour.

Example. An individual of a dull whitiſh colour; and gloſſy and ſmooth. Ex. 2. An individual, of a fine white colour; and very gloſſy, and ſmooth.

N. B. We deſcribe, and offer, as examples a few individual foſſils to confirm, and elucidate the ſpecies; and we take little further pains with the individuals, than is neceſſary for this purpoſe.

Sp. II. Of a blue colour.

Ex. An individual, which is very common, of a deep blue colour.

Sp. III. Of a green colour.

Ex. An individual, of a deep green colour, and named the verdatre. Ex. 2. An individual, of a light green colour.

Sp. IV. Of a yellow colour.

Ex. An individual, of an elegant yellow colour, and found in Oxfordſhire.

Sp. V. Of a red colour.

Ex. An individual, of a red colour; ſtrong and compact; and found in Hampſhire. Ex. 2. An individual, ſlow in being rendered ſoft by water; of a pink colour; and found in Scotland.

Sp. VI. Of a black colour.

Ex. An individual, which is the argilla nigra ponderoſa of Dacoſta, whoſe lectures we highly reſpect, as the key to the ſcience of Foſſilogy.

Sp. VII. Of a brown Colour.

Ex. An individual, of a brown colour, and found at Harwich.

Sp. VIII. Of an aſhen colour.

Sp. IX. Stone Clay; being of a hardneſs, and compactneſs, equal to that of ſtone, which it reſembles in every appearance; but poſſeſſing the properties of clay, when ſufficiently ſoaked with water.

Sp. X. Clay, under particular forms and ſhapes which are frequently named gaodæ.

Many of the gaodæ are ſhaped like ginger; ſome are very ſolid and hard; ſome are of a laminated ſtructure; and others are hollow. Certain ſmall polygonal bodies, of a reddiſh colour, found in the Archipelago, are to be referred to this ſpecies.

Genus II. Steatites, or ſoap rock.

Ch. An earth, gloſſy; very ſmooth, unctuous, and reſembling hard ſoap; and readily falling down in water, when it poſſeſſes no kind of ductility, nor any grittineſs.

Sp. I. Of a white colour.
Sp. II. Of a red colour.
Sp. III. Of a yellow colour.
Sp. IV. Of a green colour.

Genus III. Noneffervefcent chalks;

Ch. Earths, which are of a cloſe texture; eaſily reduced, and generally rubbing, on being touched, into a fine ſubtile powder, which very much colours the hands.

Sp. I. Of a red colour.

Ex. Individuals, which are named tripolies, and are of a pink colour, of various ſhades.

Sp. II. Of a black colour.

Ex. An individual, of a black colour; compact in ſtructure; freely colouring the hands; and found in Switzerland.

Sp. III. Of a white colour.

Ex. An individual, of an elegant ſnow-white colour; of a cloſe texture; colouring the hands; and found in Germany, and America.

Sp. IV. Of a brown colour.

Ex. An individual, named Terra Carioſa, or rotten ſtone.

Genus IV. Virgin earth.

Ch. An earth conſiſting of particles, looſely conſtructed together; being the proper nouriſhment of vegetables; rough, and not ſmooth; and neither reducible into a fine ſubtile powder, nor colouring the hands, like the chalks.

N. B. Virgin earth is found uncompounded with other foſſil bodies.

Sp. I. Of a brown colour.

This ſpecies is very common.

Sp. II. Of a red colour.

Sp. III. Of a black colour.

Ex. An individual, of a black colour; ſaid to be a common vegetable mould; and is the ſoil ſo much cried up for its fertility, by ſome writers on agriculture.

Genus V. Calcareous earth.

Ch. An earth, which effervеſces with acids.

N. B. A ſlight effervеſcence with acids, owing only to a mixture of a ſmall quantity of calcareous matter, does not conſtitute an earth to be of this genus.

Sp. I. Of a white colour.

Ex. An individual, which is the common white chalk. Ex. 2. An individual, named lac lunæ, or, agaricus mineralis; of a fine white colour; very light; colouring the hands; and found in the form of a farinaceous powder, tho' ſometimes concreted into a maſs.

Sp. II. Of a red colour.

Ex. An individual, of a red colour; named lac lunæ, or agaricus mineralis; reſembling that of ſpecies firſt; and found in Gottland.

Sp. III. Of a yellow colour.

Ex. An individual, of a yellow colour; named lac lunæ, or agaricus mineralis, and reſembling that of ſpecies, firſt and ſecond; and found in Timmerdala, at Weſtergottland.

Sp. IV. Of the ſtructure and hardneſs of ſtone, which it reſembles in every appearance; but falling down, when kept a ſufficient time in water.

Ex. Individuals, named ſtone marle, uſed for fertilizing lands.

Sp. V. Depoſitions of calcareous earth into particular forms, by means of water.

Ex. An individual, named oſteocolla, being a depoſition of calcareous earth, upon branches and roots of vegetables and trees.

Sp. VI. Bezoar mineralis; conſiſting of concentric cruſts; and of a globular ſhape. There are other foſſil bodies, called mineral bezoars, which come under different parts of this ſyſtem.

Genus VI. Boles.

Ch. Earths, readily falling down into a looſe maſs in water; having a degree of ductility, when not pervaded with too much water; and ſmooth, and rather unctuous to the touch.

N. B. Boles, which fertilize land, are called marles. The terræ ſigillatæ are to be excluded from foſſilogy.

Sp. I. Of a red colour,

Ex. An individual, named the Lemnian bole, of a pink colour. Ex. 2. An individual, of a red colour; much reſembling the foregoing; and uſed as a marle in Cheſhire.

Sp. II. Of a brown colour.

Ex. An individual named the fuller's earth.

Sp. III. Of a yellow colour.

Sp. IV. Of a green colour.

Sp. V. Of a white colour.

Ex. An individual, of a white colour; effer-veſcing with acids; and found at Montmartre nigh Paris, where it is uſed as a marle.

Genus VII. Loams.

Ch. Earths, of a granulated ſtructure; rough and harſh to the touch; conſiſting of a large portion of ſand, which is combined with clay, or with virgin earth, and often with divers other ſubſtances.

N. B. The ſandy ſoils, well known in huſbandry, but little noticed in books of foſſilogy, probably will arrange under this genus.

Sp. I. Of a green colour.

Ex. An individual, found in Oxfordſhire.

Sp. II. Of a yellow colour.

Sp. III. Of a brown colour.

Ex. An individual, named the Windſor loam.

Sp. IV. Of rather a black colour. Da Coſta.

Sp. V. Of a greyiſh white colour. Da Coſta.

Genus VIII.

An earth, conſiſting of a large portion of clay, which is combined with ſand, or virgin earth, and frequently mixed with other ſubſtances, as calcareous earth; not ſo harſh and rough, as the loams; not ductile, when moiſt, like clay; and wanting the character of boles.

N. B. We propoſe this genus, though it is not mentioned by foſſilogiſts, becauſe we believe,

lieve, that it is a common mould, and well known to farmers, and becauſe we wiſh to make foſſilogy uſeful to agriculture; but we do no more than barely to propoſe it.

Claſs II. Stones.

Ch. Foſſil bodies, whoſe component parts do not imbibe water; and which neither fall down into a looſe maſs, nor, when rubbed gently between the fingers, are diviſible, after they have been ſoaked a ſufficient time in water; without inflamability; containing no metal, at leaſt no further quantity than barely tinges them; and without a ſaline taſte, and ſolubility in water.

Order I. Calcareous Stone.

Ch. Stone, effervеſcing with acids; burning into quick-lime; and not ſtriking fire with ſteel.

N. B. When calcareous ſtone is either tranſparent or figured, it is with propriety called ſpar; which name we apply to calcareous ſtone, when it is either tranſparent or figured, but in other caſes we retain the name of the order. Calcareous matter is ſometimes earthy, and ſometimes ſtoney; both which ſtates are quite diſtinct in foſſilogy. A ſlight effervеſcence with acids, owing only to a mixture of a ſmall quantity of calcareous matter, does not conſtitute a ſtone to be of this order. The four firſt genera of this order, generally are found in large ſtrata; and many of the individuals of theſe genera have been uſed in building, and in conſequence thereof falſely conſidered and arranged, as of the ſame nature with the common ſtones employed for that purpoſe; although their ſeparation makes the knowledge of them much more plain and eaſy.

Genus I. Calcareous ſtone of a granulated ſtructure.

Sp. I. Of a red colour.
Sp. II. Of a blue colour.
Sp. III. Of a white colour.

Ex: An Individual, named Portland ſtone; and conſiſting of fine granules.

Sp. IV. Of a brown colour.

Ex. An individual, named Ketton ſtone.

Sp. V. Of a black colour.

Ex. An Individual, of a black colour; containing inflammable matter, the fetor of which can eaſily be excited; and being one of the lapides ſuilli of authors.

Genus II. Calcareous ſtone of a ſolid ſtructure.

Sp. I. Of a blue colour.
Sp. II. Of a white colour.
Sp. III. Of a grey colour.
Sp. IV. Of a black colour.
Sp. V. Of a red colour.

Genus III. Marble.

Ch: Calcareous ſtone, neither tranſparent nor figured, but capable of a fine poliſh, and beautifully coloured.

Sp. I. Of a white colour.

Section I. Marbles, having either one or two colours; and that, which is moſt predominant, is to form the ſpecies.

Ex. An individual, which is the common white marble, for the moſt part compoſed of granules, which are of different ſizes; and, when theſe are the largeſt, the marble frequently is called the ſaline.

Sp. II. Of a black colour.

The individuals of this ſpecies are often ſet with ſhells, Coralloids, &c.

Sp. III. Of a red colour.

The antique red, and of a ſolid ſtructure, is the chief individual.

Sp. IV. Of a brown colour.

Sp. V. Of a green colour.

Ex. An individual, which is the Egyptian marble: it is of a greeniſh colour, with a mixture of white: its ſubſtance is not uniform; ſome part of it not being calcareous.

Sp. VI. Of a yellow colour.

Ex. An individual, named the Sienna marble, and found in Italy.

Sp. VII. Of a grey aſhen colour.

Section II. Variegated marbles, having three or more different colours.

N. B. The individuals of this ſection ought to be deſcribed in the room of the ſpecies, which we therefore omit. This remark is applicable to the following ſection; as alſo to ſome other parts of this ſyſtem.

Section III. Marble, compoſed of different pieces, which are inlayed among one another; though theſe pieces are not always calcareous.

Genus IV.

Calcareous ſtone of a laminated ſtructure, and not formed from depoſition by water. Or calcareous ſlate.

Sp. I. Of a white colour.
Sp. II. Of a blue colour.
Sp. III. Of a red colour.
Sp. IV. Of a yellow colour.
Sp. V. Of a brown colour.

Genus V.

Calcareous ſtone depoſited by water, into plates or laminæ, which affect the figure and the direction of the body, on which they are depoſited, being diſtinguiſhed from the foregoing genus by being found near ſprings and rivers, abounding with calcareous matter, or by taking the figure, or direction of ſome particular body.

Sp. I. Of a brown colour.

Ex. Individuals of an earthy opaque brown colour.

Sp. II. Colourleſs.

Ex. Individuals, which are ſemitranſparent and are ſpar; and by water carried into, and filling veins of various kinds of ſtones.

Sp. III. Of a white colour.

Ex. Individuals, being ſpar; ſilling up veins of ſtones; and being carried thither by water. Ex 2. An individual, being an incruſtation of a white colour, and opaque; and found in the waters at Carlesbad.

Sp. IV. Of a yellow colour.

Ex. An individual, videlicet, the ſeptum of the Ludus Helmontii.

Sp. 5. Of a red colour.

Ex. An individual, found in the waters at Carlesbad; conſiſting of thin laminæ regularly placed above one another; and of a browniſh red colour, though ſome of the laminæ are of a white one; and admitting a fine poliſh, and gloſs.

Sp. V. Oſteocolla; being incruſtations upon the roots, branches, twigs of trees and vegetables; and of a cylindrical form.

Genus VI.

Calcareous ſtone, or Spar of the figure of vegetable bodies.

N. B. It will be too difficult to exclude from this genus all ſuch foſſils, as really owe their figure to depoſition on vegetable bodies, though only ſuch as are of a natural figure reſembling vegetable bodies, are meant to be comprehended under this genus.

Sp. I. Flos ferri; being compoſed of ramifications, reſembling white coral; frequently of a moſt elegant white colour, and ſometimes ſo exquiſite, as to be the moſt lovely picture of innocence and beauty; being properly a ſtalactite; and found in Styria, Coyrynthia, Alſatia, &c.

Sp. II. Colliflower ſpar, ſo called from its reſemblance to that body.

Sp. There are many different ſpecies of this genus, which we ſhall not enumerate.

Genus VII.

Unfigured ſpar; or calcareous ſtone, which is tranſparent, and is not figured.

Sp. I. Of a ſolid ſtructure.

Sp. II. Of a granulated ſtructure.

Sp. III. Of a laminated ſtructure.

Sp. IV. Of a fibrous ſtructure.

Ex. An individual, of a fibrous ſtructure; colourleſs; and found in Arken-dale, in Yorkſhire. Ex. 2. An individual, of a whitiſh colour; having longitudinal fibres, which branch out lateral ones, dilineated upon it; being one of the flos ferri, ſo named, of authors; and found in the county of Durham. Ex. 3. An individual, agreeing with the laſt, except that its longitudinal fibres branch out no lateral ones.

Genus VIII. Rhombic Spar.

Ch. Calcareous ſtone, being either of a rhombic figure, or breaking into fragments, which are of that figure.

Sp. I. Colourleſs.

Ex. An individual, of a perfect tranſparency; refracting lines double; and found in Ireland.

Sp. II. Of a white colour.

Sp. III. Of a red colour.

Sp. IV. Of a black colour.

Genus IX. Pyramidal ſpar.

Ch. Calcareous ſtone, of a pyramidal figure.

Sp. I. A pyramid of ſix ſides.

The individuals of this ſpecies generally are nearly colourleſs; they ſometimes are opaque: and the pyramids are of various ſizes. There is one particular individual, conſiſting of two pyramids, joined by their baſes, which union is called a perfect figure; each pyramid having ſix ſides; and with ſix planes, one at every common angle of the two pyramids.

Sp. II. A Pyramid of three ſides.

There is one particular individual, which is of a perfect figure; of a lenticular form; each pyramid conſiſting of three ſides; and the common baſe of the two pyramids being cut into ſix planes.

Sp. III. An irregular pyramid.

Ex. An individual, named the dog's tooth-ſpar.

Genus

Genus X. Columnar ſpar.

Ch. Calcareous ſtone, of the figure of a column.

Sp. I. A column of ſix ſides.
Sp. II. A column of three ſides.
Sp. III. Irregular columns.

Ex. Individuals, conſiſting of columns, whoſe diameters are not of an uniform thickneſs; with ends obliquely truncated; ſometimes colourleſs; and ſometimes of a black colour, and then called lapides ſuilli.

Genus XI.

Columnar, and pyramidal ſpar.

Char. Calcareous ſtone, conſiſting of a column and pyramid.

Sp. I. Of a trigonal pyramid, and trigonal column.

Sp. II. Of a trigonal pyramid, and hexagonal column.

Genus XII. Polygonal ſpar.

Ch. Calcareous ſtone, being polygonal; having determinate ſides, which are various in number;

and being neither of a pyramidal nor columnar figure.

Genus XIII.

Ch. Spar, or calcareous ſtone, of a figure, which has only one angle.

Sp. I. Formed of two planes, intercepting an angle, like the two ſides of a triangle.

Sp. II. Of the form of a wedge.

Genus XIV. Spherical ſpar.

Ch. Calcareous ſtone, of a globular figure.

Sp. I. Of a white colour.

Ex. An individual, gloſſy, and of a white colour; compoſed of ſpherical cruſts; of a perfect ſpherical figure; and named the piſolithus, or pea-ſtone; and found in a ſparry incruſtation, at Carleſbad.

Sp. II. Of a grey colour.

Sp. III. The ſtalagmites; of a globoſe figure; depoſited by water, falling from ſtalactites; and of a ſtructure, which generally is ſtrated.

Sp. IV. The maiden paps, ſo called; of a globular figure; of a hard and compact ſtructure; of a white brown colour; and found at Tunſtall, in the county of Durham.

Genus XV. Stalactite.

Ch. Calcareous ſtone, running into no inconſiderable length; hanging from the roofs of caverns, veins, &c.; and depoſited by water.

Sp. I. Having a cylindrical tube and ſhape.

The individuals generally are tranſparent and pure, and often conſiſt merely of a cylindrical tube: they ſometimes are externally beſet with large granules; they ſometimes are impure and opaque, conſiſting of a coarſe matter, of a brown colour.

Sp. II. Of a laminated ſtructure.

Ex. An individual, pretty much tranſparent; of a colour, which is chiefly yellow, tho' ſometimes the individual is colourleſs; and between the ſtrata, having rings of a white colour, and opaque. Ex. 2. An individual, of an elegant white colour, opaque, and reſembling ivory; and of a cruſtrated ſtructure.

Sp. III. Of a conical, and not of a cylindrical ſhape; nor of a laminated ſtructure.

The ſtructure of the individuals is fine or coarſe; ſometimes ſolid, at other times granulated; they are colourleſs, and of a red, a yellow, and an opaque earthy colour.

Order II. Quartzoze ſtone, or Quartz.
Ch. Foſſil bodies, ſtriking fire with ſteel; and either tranſparent, or figured; and of a ſolid ſtructure.

Quartzoze Chrystal.

Ch. A quartzoze ſtone, which is well diſtinguiſhed from the other foſſil bodies of this order; being never properly inveſted with an outward cruſt; clearer than flint and agate; frequently figured, agate and flint never or ſeldom having proper figures; not breaking in ringlets like flint, and wanting the delicate appearance of agate; and being, by the character of the order, diſtinguiſhed from all other foſſil bodies.

N. B. Quartzoze chryſtal conſiſts of many different genera, comprehended under this order. Quartzoze chryſtal, of a granulated ſtructure, is brought under order vi. of claſs ii.

Different ſorts of quartzoze chryſtal frequently are called precious ſtones; the reaſon for this diſtinction being chiefly on account of their beauty and hardneſs: for they have great luſtre; and many of them are ſo hard, that they cannot be touched by the file. Yet upon this, or any other diſtinction, to conſider precious ſtones as different bodies from quartzoze chryſtal, and to arrange them accordingly, is contrary to nature, and all the laws of arrangement.

Quartzoze Chryſtal, poſſeſſing an eminent degree of luſtre, beauty and hardneſs, is called ruby, when it has a fine red colour, and preſerves it in the fire; ſaphire, when it has a bright blue colour; topaz, when it has a beautiful golden yellow colour; emerald, when it has a fine green colour; chryſolite, when it has a duſky green colour, with a caſt of yellow; amethyſt, when it has a violet colour; garnet, when it has a deep red colour; hyacynth, when it has rather a deep red colour, approaching a flame colour; and beryll, or aquamarine, when it has a ſea, or bluiſh green colour. Theſe are nine of the ten precious ſtones; the diamond is the tenth.

Quartzoze chryſtal, which is ſuperior to all other precious ſtones, in its pellucidity, luſtre, beauty and hardneſs, and which attracts its foil, is called diamond; and is of various colours. All the precious ſtones admit various ſhades in their particular colours.

Genus I.

Quartzoze chryſtal, which is impure, and not ſo pellucid, as to be ſemitranſparent; and which is not figured.

N. B. This genus is ſometimes found compoſed of ſeveral pieces conglutinated together.

Sp. I. Of a red colour.
Sp. II. Of a brown colour.
Sp. III. Of a green colour.
Sp. IV. Of a yellow colour.
Sp. V. Of a white colour.
Sp. VI. Of a black colour.

Genus II.

Unfigured quartzoze chryſtal, which is pure, and tranſparent.

The diamond frequently belongs to this genus.

Sp. I. Colourleſs.
Sp. II. Of a green colour.

The beryll generally pertains to this ſpecies.

Sp. III. Of a brown colour.

Sp. IV. Of a yellow colour.

The topaz frequently belongs to this ſpecies.

Sp. V. Of a white colour.

Sp. VI. Of a red colour.

The garnet ſometimes is of this ſpecies.

Sp. VII. Of a blue colour.

The ſaphire generally is of this ſpecies, as alſo the amethyſt.

Sp. VIII. Of a black colour.

Genus III.

Quartzoze chryſtal, of a pyramidal figure.

Sp. I. A pyramid, of ſix ſides.

It is very common; and it ſometimes is a perfect figure. The amethyſt frequently belongs to this ſpecies.

Sp. II. A pyramid, of four ſides.

The emerald, from Carthagena, is ſaid ſometimes to be of this ſpecies; being a perfect figure; and detruncated, and foul.

Sp. III. A pyramid of eight ſides.

A query ariſes, whether this ſpecies exiſts. It is ſaid, that the diamond is ſometimes in a pointed octohedral form. I have ſeen a perfect figure of chryſtal, each pyramid having eight ſides, which, towards the apex, were joined two and two together, into only four ſides.

Genus IV.

Quartzoze chryſtal, of a columnar figure.

The emerald, and ruby, are the only ſorts of chryſtal, which are found among writers, correſponding to this genus.

Sp. I. Of a column, of four ſides.

The emerald is ſaid to be ſometimes of this ſpecies.

Sp. II. Of a column, of ſix ſides.

The emerald, from Peru, is ſaid to be a priſm of ſix ſides.

Sp. III. Of a column, with many determinate ſides; but which are various, and anomalous, in regard to number.

Ex. The Brazil emerald, with ſides deeply furrowed.

Sp. IV. Of a cylindrical column.

The emerald is ſaid, ſometimes, to be of this ſpecies.

Genus V.

Quartzoze chryſtal, conſiſting of a column and pyramid.

Sp. I. Of an hexagonal column, and an hexagonal pyramid.

This ſpecies is very common; the individuals are generally very pure and pellucid, but ſometimes foul and opaque. The figure, ſometimes is perfect, conſiſting of an hexagonal column, with an hexagonal pyramid at each end. The topaz ſometimes is of this ſpecies, and of a perfect figure. The garnet ſometimes is of this ſpecies.

Sp. II. Of a quadrilateral pyramid, and a quadrilateral column.

A topaz, of this ſpecies is mentioned; alſo a chryſolite, which is a perfect figure.

Sp. III. A column, of eight ſides, with a pyramid of ſeven.

A topaz is the only one I know mentioned to be of this ſpecies. Four of the priſms are broad, and diſtinct; the other four are very narrow. The pyramid conſiſts of ſeven facets, the uppermoſt of which is a lengthened hexagon plane, and the other ſix, which form the pyramid, are of various figures.

Sp. IV. Of a column of four ſides, and a pyramid of twelve facets.

This ſpecies is only known in the ruby, and the priſms are very much furrowed.

Genus VII.

Polygonal quartzoze chryſtal.

Ch. Chryſtal, being polygonal; having determinate ſides, which are various in number; and neither of a pyramidal, nor a columnar figure.

The diamond frequently belongs to this genus.

Sp. I. Of a red colour.

The garnets often are of this ſpecies, conſiſting of a various number of facets: as alſo the ruby, which is often found in octagons, like alum.

Sp. II. Of a blue colour.

The amethyſt frequently is of this ſpecies: alſo ſometimes the ſaphire.

Sp. III. Of a green colour.

The chryſolite is ſaid often to be of this ſpecies.

Sp. IV. Colourleſs.

Genus VII.

Quartzoze chryſtal, of a cubic figure.

The diamond is ſaid, ſometimes to be of this genus; alſo the emerald, and amethyſt: but the exiſtence of the genus may be doubted.

Genus VIII. Flint, or ſilex.

Ch. Quartzoze ſtone, very hard and compact; of a ſolid ſtructure; always inveſted with an outward cruſt; and either tranſparent, or ſemitranſparent:

Sp. I. Of a black colour.

Sp. II. Of a brown colour.

Sp. III. Of a grey colour.

Sp. IV. Of a blue colour.

Sp. V. Of a yellow colour.

Sp. VI. Of a white colour.

Genus IX. Agate.

Ch. A Quartzoze ſtone, which poſſeſſes all the characters of flint; accompanied with an elegant and delicate appearance.

Sp. I. Colourleſs.

Ex. An individual, which is the common agate.
Ex. 2. An agate, which interiorly is thick ſet with an appearance of bubbles.

Sp. II. Of a red colour.

This ſpecies generally is known by the name of the cornelian; which term is very improperly applied to agates, of any other colour.

Sp. III. Of a white colour.

Ex. An individual, named the chalcedony, which is a fine delicate agate; of a milk-like colour; and only ſomewhat tranſparent.

Sp. IV. Of a yellow colour.

Sp. V. Of a blue colour.

Sp. VI. Of a brown colour.

Sp. VII. Of a green colour.

Sp. VIII. Agate, remarkably altered in colour, as it is moved in the light.

Ex. An individual, the Cats-eye agate; ſo called from its reſemblance to the eye of that animal; and of a greeniſh colour. Ex. 2. An individual, named the opal.

Sp. IX. Mocoa agate; being agate, interſperſed with arboreſcent delineations.

Sp. X. Onyx agate, compoſed of agate matter, of two different colours, which run in lines, having the ſame direction; both colours, ſometimes, being tranſparent; both ſometimes opaque; and ſometimes the one tranſparent, and the other opaque.

The fortification and the anular agate are two individuals of this ſpecies; the lines of the latter, in which the colours run, being circular; thoſe of the former having a great reſemblance to the lines of a fortification. The ſardonyx is an individual of this ſpecies; this name is given to an onyx, when its colours are red and white.

Sp. XI. Agate, ſpotted, of different colours.

Order III. Fluor, or flus.

Ch. Foſſil bodies, which ſtrike not fire with ſteel; efferveſce not with acids; very readily are brought into fuſion, either bv themſelves, or when mixed with certain other earths aud ſtones, eſpecially the calcareous; and more eaſily brought into fuſion, under ſimilar circumſtances, than the foſſil bodies, with which they can be confounded.

N. B. There is a particular kind of fluor, which diſſolves very ſlowly, but without any efferveſcence, in acids, as in oil of vitriol and ſpirit of nitre. Cronſted. This is called zeolites, which, as belonging to the fluors, we ſhall call zeolites fluor.

Genus I.

Opaque and unfigured fluor.

Sp. I. Of a brown colour.

Ex. An individual, of a brown colour; of an earthy appearance; found in Derbyſhire, and often called cauk. Ex. 2. An individual, which is a marmor metallicum, as deſcribed in the next ſpecies, but is of a brown colour.

Sp. II. Of a white colour.

Ex. An individual, frequently called marmor metallicum; of a white colour, with a caſt of brown; and compoſed of laminæ, cloſely ſet together.

Sp. III. Of thin plates, in little ſeparate faſciculi.

Ex. An individual, of a brown colour.

Genus II.

Tranſparent and unfigured fluor.

Sp. I. Colourleſs.

Sp. II. Of a blue colour.

Sp. III. Of a red colour.

Sp. IV. Of a yellow colour.

Sp. V. Of a green colour.

VI. Of a black colour.

Genus III.

Fluor, in the form of planes, ſtanding parallel to one another; preſenting edges, which are cut and determined; and detached from each other.

Sp. I. Of a white colour.

Sp. II. Colourleſs.

Sp. III. Of a globular ſhape, and reſembling a ſmall ball; compoſed of planes, which are cloſeſly joined together, but outwardly appear diſtinct, like ſmall lines or threads.

Genus IV.

Figured fluor, with regular ſides, which are perfectly ſquare, and then the figure of the fluor is a cube; or with regular ſides, which are perfectly rectangular, and then the figure of the fluor is like that of a ſlab, it being rectangular, and the length much greater than the depth; or with regular ſides, which are accurately rhomboid, and then the figure of the fluor is like that of rhombic ſpar.

Sp. I. Colourleſs.
Sp. II. Of a blue colour.
Sp. III. Of a green colour.
Sp. IV. Of a red colour.
Sp. V. Of a yellow colour.
Sp. VI. Of a white colour.
Sp. VII. Of a black colour.

Genus V. Columnar fluor.

Ch. Fluor, of a columnar figure.

Ex. An individual, mentioned by Cronſted, which is priſmatical and truncated.

Genus VI.

A fluor, in configuration reſembling vegetables.

Ex. An individual, named fluor eruciformis.

Genus VII.

A fluor, of a pyramidal figure.

Sp. I. A pyramid of three ſides.

Ex. An individual, of a brown colour, compoſed of fibres, which are ſo diſpoſed, as to form a pyramid of three ſides.

Sp. II. Of a pyramid of four ſides.

Order IV. Gypſum, or plaiſter ſtone, or Parget.

Ch: Foſſil bodies, which cut and ſcrape eaſily; in the fire readily fall or calcine, but with water concrete again into a maſs, which ſoon becomes hard.

N. B. Gypſum, properly ſpeaking, is a chymical ſalt, which wants the properties of ſalts, ſo called in foſſilogy. See the article gypſum, under the claſs of ſalts.

Genus I.

Gypſum of a laminated ſtructure.

Sp. I. Glacies mariæ; compoſed of laminæ, which are large, thin, and eaſily ſeparable.

Ex. An individual, which is colourleſs, and found in Switzerland.

Sp. II. With a ſuperficies divided, and covered with numerous impreſſions of little ſhining planes; but of a ſtructure, which is not really laminated. This ſpecies is generally of a white colour.

Genus III.

Gypſum, of a ſolid ſtructure.

Sp. I. Of a white colour.

Ex. An individual, which is called a white alabaſter; clear and tranſparent; and found in Perſia. Ex. 2. An individual, called an alabaſter; opaque; and found in Italy.

Sp. II. Of a yellow colour.

Ex. An individual, called an alabaſter; of a yellow colour, and tranſparent.

Genus IV.

Gypſum, of a granulated ſtructure.

Sp. I. Colourleſs; being compoſed of gloſſy ſhining colourleſs granules.

Sp. II. Of a brown colour.

Ex. An individual, compoſed of ſhining brown granules, and found at Montmartre, near Paris.

Sp. III. Of a white colour.

Ex. An individual, of a white colour, and compoſed of ſhining granules. Ex. 2. An individual, of a white colour; opaque, and not gloſſy; of a compact granulated ſtructure.

Genus V.

Gypſum, of a fibrous ſtructure.

Sp. I. Colourleſs.

Sp. II. Of a white colour.

Sp. III. Of a brown colour.

Sp. IV. The radiated; conſiſting of radii, proceeding from one centre; gloſſy, and coloured with a particular yellow tinge; ſometimes the ſhape is flat and circular, but generally it is more or leſs globular; and only found in the iſland of Sheppy.

Genus VI. Selenites.

Ch. Gypſum, of regular figures.

Sp. I. Of a rhombic figure.

The ſides are often double. The individuals generally are tranſparent.

Sp. II. Of the figure of a column.

The column almoſt always conſiſts of ſix ſides.

Sp. III. Of two convex ſurfaces oppoſite each other, which we call the top and bottom. The ends are angular: the ſides are two, and ſometimes very broad, and ſometimes are wanting.

Sp. IV. Of the form of ſtalactites, being really ſuch.

Sp. V. Of the form of the head of an arrow.

Ex. An individual, which is yellow and tranſparent.

Order V. Petra.

Ch. Stone, of a cloſe ſolid ſtructure; and wanting the characters of the other orders of this claſs.

Genus I. Pebble.

Ch. Petra, admitting a very fine poliſh; compoſed of a flinty matter, and of great hardneſs; opaque; inveſted with an outward cruſt; and frequently marked with contentric rings, ſurounding a nucleus.

Sp. I. Of a brown colour.

Sp. II. Of a yellow colour.

Sp. III. Of a red colour.

Sp. IV. Of a white colour.

Sp. V. The variegated.

Genus II. Jaſper.

Ch. Petra, of an appearance, which is very dull and opaque, but bearing a fine poliſh; and of great hardneſs, and compactneſs.

Sp. I. Of a red colour.

Sp. II. Of a green colour.

Sp. III. Of a black colour.

The lapis lydius is a black jaſper.

Sp. IV. Of a yellow colour.

Sp. V. Of a white colour.

Sp. VI. Variegated jaſper.

Genus III. Petroſilex, or Chert.

Ch. Petra, of a ſolid compact texture; in ſtructure reſembling flint, but coarſer, and not at all tranſparent; gloſſy; and not inveſted with an outward cruſt.

Sp. I. Of a white colour.
Sp. II. Of a blue colour.
Sp. III. Of a red colour.
Sp. IV. Of a black colour.
Sp. V. Of a brown colour.

Genus IV. Feltſpat.

Ch. Petra, being quartzoze chryſtal, perfectly opaque; of a ſolid, yet frequently of a ſcaley ſtructure; ſhining, and gloſſy; and very hard and compact.

Sp. I. Of a red colour.
Sp. II. Of a white colour.
Sp. III. Of a green colour.
Sp. IV. Of a brown colour.
Sp. V. Of a black colour.

Ex. An individual, named quartzum granaticum, conſiſting of a black feltſpat, with pieces of a red one inlayed in it; and found in Sweden.

Genus V. Marmoroproſeron.

Ch. Petra, of a fine and cloſe ſtructure; of elegant colours or colour; admitting a degree of poliſh; never, or very ſeldom ſtriking fire with ſteel; and generally ſcraping pretty eaſily with the knife.

Sp. I. Of a green colour.

Ex. An individual, named the ſerpentine ſtone, or ophitis. Ex. 2. An individual, called one of the nephritic ſtones, and found at Otaheite.

Sp. II. Of a red colour.

Ex. An individual, of a pale fleſhy colour.

Sp. III. Of a yellow colour.

Ex. An individual, called nephritic, and brought from China.

Sp. IV. Of a blue colour.

Sp. V. Of a black colour.

Genus VI. Petra vulgaris.

Ch. Petra, of a ſolid ſtructure; and wanting the characters of feltſpat, and the other genera of this order.

Sp. I. Of a black colour.

Ex. An individual, of a black colour; of a firm, compact ſolid ſtructure; interſperſed with ſome ſhining granules; and found in Sweden, and named the trapſtone.

Sp. II. Of a blue colour.

Sp. III. Of a red colour.

Sp. IV. Of a white colour.

Ex. An individual, which is the cinereum album of Da Coſta, the cos olearia of Woodward, and commonly called the Turkey ſtone; of a whitiſh colour; of a very firm and compact texture; and capable of a tolerable poliſh.

Sp. V. Of a green colour.

Ex. An individual, of a dull greeniſh colour; of a light weight, yet of a firm and compact ſtructure; and ſomewhat gloſſy; and found in Weſtmoreland; and called ragſtone.

Order

Order VI. Saxum.

Ch. Stone of a granulated ſtructure; and wanting the characters of the other orders of this claſs.

Genus I. Chryſtalline ſaxum.

Ch. Saxum, conſiſting of granules of quartzoze chryſtal, which are pellucid.

Sp. I. Colourleſs.

Ex. An individual, named the millſtone; conſiſting of granules, tranſparent, of rather a large ſize, and blended with ſome ſmaller and opaque granules, of a brown colour.

Sp. II. Of a red colour.
Sp. III. Of a brown colour.
Sp. IV. Of a white colour.

Genus II. Saxum vulgare.

Ch. Saxum, conſiſting of granules, which are opaque.

Sp. I. Of a red colour.
Sp. II. Of a brown colour.

Ex. An individual, conſiſting of ſmall granules;

of a brown colour, of a cloſe texture; and, from its uſe, named ſcythe ſtone.

Sp. III. Of a green colour.

Sp. IV. Of a yellow colour.

Sp. V. Of a blue colour.

Ex. An individual, often called the whin-ſtone, of a dark bluiſh colour; of a compact granulated ſtructure; and not gloſſy nor ſhining.

Sp. VI. Of a black colour.

Ex. An individual, of a black colour; of a compact granulated ſtructure; ſet with ſome ſhining granules; found in the giant's cauſeway; and often called a Baſaltes. Ex. 2. An individual, of a black colour; of a cloſe compact granulated ſtructure; found at Otaheite, and often called a Baſaltes.

Sp. VII. Conſiſting of numerous ſhining granules, opaque, but having a ſplendor reſembling the glitter of micæ, and which are found on near examination to compoſe the whole of the individual. It is of different colours, of a blue, of a black, and of a greeniſh colour; and often named the whin-ſtone, and is very frequent in the new pavements of this city.

Genus III. Arenæ.

Ch. Saxum, compoſed of granules, which are looſe and cohere not together, and formed neither of comminuted nor decompounded foſſil bodies.

Sp. I. Of a yellow colour.
Sp. II. Of a brown colour.
Sp. III. Of a white colour.
Sp. IV. Of a red colour.

Genus IV. Peaſtone, or Piſolithus.

Ch. Saxum, conſiſting of little bodies, which are round and globoſe.

Order VII.

Stone, of a laminated ſtructure; and which cannot be referred to any other order of this claſs: or laminated ſtone.

Genus I. Slate.

Ch. Laminated ſtone, of a ſolid ſtructure.

Sp. I. Of a black colour.

Sp. II. Of a red colour.

Sp. III. Of a blue colour.

Sp. IV. Of a green colour.

Sp. V. Of a grey, or aſh colour.

Genus II. Flag.

Ch. Laminated ſtone, of a granulated ſtructure.

Sp. I. Of a brown colour.

Sp. II. of a white colour.

Sp. III. Of a ſomewhat red colour.

Sp. IV. Of a grey colour.

Genus III. Micæ, or glimmer.

Ch. Laminated ſtone, in the form of thin plates; of great ſplendor and glitter; and not ſcraping with the knife.

N. B. The colours of the individuals are often tarniſhed, and are of many different ſhades.

Sp. I. Of a white colour.

Ex. An individual, in the form of ſmall flakes; and of a ſilver colour, whence named mica argentea. Ex. 2. An individual, named Muſcovy glaſs; conſiſting of laminæ, which frequently are very large, diviſible to a great minuteneſs, and of a white colour.

Sp. II. Of a yellow colour.

Ex. An individual, found in ſmall flakes; and of a golden colour, whence it is called mica aurea.

Sp. III. Of a black colour.
Sp. IV. Of a green colour.
Sp. V. Of a brown colour.

Order VIII. Stone, of a fibrous ſtructure, which belongs not to any other order of this claſs, or fibrous ſtone.

Genus I. Amianthi.

Ch. Stone, compoſed of fibres which are pliable and ſoft, when ſeparated.

Sp. I. Of a green colour.

Ex. An individual, of a green colour; very gloſſy; and of a ſilky ſoft appearance; found in very ſhort fibres, running in veins through marble and marmoroproſeron.

Sp. II. Of a brown colour.

Ex. An individual, of a cinnamon brown colour; with fibres, which are commonly three, but ſometimes ſix inches in length; and found in Braſil.

Sp. III. Of a white colour.

Ex. An individual, of a white colour; with fibres, one, two, or more inches in length; and found in the Pyrenees.

Genus II. Aſbeſti.

Ch. Stone, compoſed of fibres, which are hard, rigid and brittle, when ſeparated; and which are not ſo eaſily diviſible, as the amianthi.

Sp. I. Of a yellow colour.

Sp. II. Of a green colour.

Sp. III. Of a black colour.

Sp. IV. Of a brown colour.

Sp. V. Of a white colour.

Ex. An individual, named alumen plumoſum, conſiſting of fibres, which are parallel, rigid, and very brittle; gloſſy, and of a fine white colour; and the ſpicula, when rubbed for ſome time between the fingers, producing very intenſe pain and itching.

Genus III.

Fibrous ſtone, whoſe fibres are not diviſible.

Sp. I. Of a blue colour.

Order IX. Stone, compoſed of a matter, which is not gritty; or gritleſs ſtone, if we may be allowed to adopt the term gritleſs.

Ch. Stone, which is ſoft, and not compoſed of a gritty matter; hence cutting very eaſily, and in all directions, without the harſhneſs and grating obſerved in cutting other ſtones.

Genus I. Leatherſtone.

Ch. Stone, which is flexible and elaſtic; and called leatherſtone, from its reſemblance to leather.

Sp. I. Aluta montana; being ſoft and pliable; and not of a laminated ſtructure.

Sp. II. Caro montana; of a laminated ſtructure; and found in Sweden.

Sp. III. Suber montanum, or mountain cork; bearing a reſemblance to cork.

Genus II. Talcum.

Ch. Stone, ſoft, and unctuous to the touch; cutting and ſcraping eaſily; opaque, yet generally very gloſſy; and not of a ſtoney, but of an earthy ſtructure and appearance.

As calcareous matter is found in the ſtate both of an earth and a ſtone, ſo is the matter, which compoſes the individuals of this genus; the ſame conſtituting ſteatites, which is a genus of the earths.

Sp. I. Of a white colour.

Sp. II. Of a red colour.

Sp. III. Of a yellow colour.

Sp. IV. Of a black colour.

Sp. V. Of a fibrous ſtructure.

Ex. An individual, chiefly compoſed of ſhort fibres; of a greeniſh caſt; and employed for culinary utenſils; and hence named lapis ollaris.

Sp. V. Of a laminated ſtructure.

Ex. An individual, named the Venetian talc; compoſed of fine laminæ; very gloſſy, and of a green hue. Ex. 2. An individual, of a white colour; dull and opaque; and coarſely laminated.

Ordo X. Compound ſtones.

Ch. Stones, eſſentially conſiſting of more than one kind of ſtone.

N. B. We refer the puddingſtone, which conſiſts only of one kind of ſtone, to its proper genus.

Genus I. Granite.

Ch. A ſtone, conſiſting of feltſpat, either with micæ, or with pieces of pellucid quartzoze chryſtal, or with both theſe, interſperſed through, and blended with it.

N. B. We eſtabliſh the ſpecies from the colour of the feltſpat.

Sp. I. Of a red colour.

Sp. II. Of a white colour.

Sp. III. Of a brown colour.

Sp. IV. Of a yellow colour.

Genus II. Porphyry.

Ch. Stone, conſiſting of a baſis, which is of a ſtrong compact texture; with detached pieces of feltſpat, embedded in it; and freely ſtriking fire with ſteel.

N. B. The ſpecies are eſtabliſhed from the colour of the ſtoney baſis, and not from that of the feltſpat: their colours are generally different, tho' they ſometimes are the ſame.

Sp. I. Of a green colour.

Sp. II. Of a red colour.

Sp. III. Of a brown colour.

Genus III.

Stone, which is ſet with nodules of different kinds.

Sp. I. Of a black colour.

Ex. An individual, named carpolithus; of a black colour, and ſet with green or white kernels, or nodules, which frequently poſſeſs a degree of tranſparency.

Claſs III. Inflamables.

Ch. Foſſil bodies, which readily take fire and burn.

Genus I. Sulphur.

Ch. An inflamable, which in cloſe veſſels ſublimes in the form of ſtriæ; in the open air is decompounded by heat into penetrating, acrid, and ſuffocating fumes; and when deflagrated with nitre, leaves vitriolated tartar.

Sp. I. Of a yellow colour.

Ex. An individual, which is tranſparent; and is named ſulphur pellucidum. Ex. 2. An individual, of a high yellow colour, and opaque.

Sp. II. Of a red colour.

It has an elegant glow; the individuals generally are opaque, but ſometimes they are tranſparent. This ſpecies is mixed with a proportion of arſnic. Perhaps this ſpecies belongs to the claſs of cryptometalline foſſils.

Sp. III. Of a white colour.

Ex. An individual, found at Solfatara.

Sp: IV. Sulphur ore; being ſulphur contained in a ſtoney baſis.

Genus II. Bitumen.

Ch. An inflamable, of a black colour; ſhining and gloſſy; brittle, but of a cloſe ſolid texture; and yielding, when burnt, a ſtrong ſmell.

Sp. I. Aſphaltum, or bitumen judaicum.

Sp. II. Pix montana.

Genus III. Maltha.

Ch. An inflamable, ſoft and pliable; unctuous and coarſe.

Sp. I. Of a black colour.

Sp. II. Of a brown colour.

Sp. III. Peat, before it is dried.

Genus IV. Petroleum.

Ch. An inflamable, which, when pure, is in a fluid form; very inflamable, and burning like oil; and generally of ſo little ſpecific gravity, as to ſwim almoſt in all fluids.

Sp. I. Of a greeniſh colour.

Ex. An individual, found at Sumatra; thin and pellucid; and on burning leaving no reſiduum.

Sp. II. Of a red colour.

Sp. III. Of a browniſh yellow colour, like amber. This ſpecies is the moſt common.

Sp. IV. Of a black colour.

Ex. An individual, which is the Barbadoes oil, being of a black colour, opaque, and thick like treacle. Ex. 2. An individual, which is the Britiſh oil; found floating on ſprings, having ouzed out of the ſtone, which is its proper nidus: this oil generally is found in a ſtone of a black colour, and of a granulated ſtructure, which yields it on diſtillation.

Genus V. Amber.

Ch. An inflamable, which, on burning, gives a peculiar fragrant odour.

Sp. I. Of a yellow colour.

Sp. II. Of a red colour.

Sp. III. Of a brown colour.

Sp. IV. Of a white colour.

Sp. V. Of a black colour.

Sp. VI. Colourleſs.

Genus VI. Ambergreaſe.

Ch. An inflamable, which when burnt, yields a peculiar fragrant ſmell. It generally is foul and opaque.

N. B. Ambergreaſe does perhaps belong to the foregoing genus.

Sp. I. Of a grey colour.

Sp. II. Of a white colour.

Sp. III. Of a black colour.

Sp. IV. Of a brown colour.

Genus VII. Coal.

Ch. An inflamable, of a black colour; breaking generally in an horizontal direction; burning with ſmoke, into an uninflamable reſiduum; and much more hard and compact than any other genus of this claſs, with which it can be confounded.

Sp. I. Common cinder coal, burning into cinders, with a thick ſmoke. Ex. The Durham coal.

Sp. II. Common aſh coal; burning into aſhes and not into cinders; and not going out, until its inflamable principle is entirely conſumed. It is found in Scotland and other countries.

Sp. III. Cannel coal; being of a black jet colour; of a ſolid and compact texture; breaking in any direction; burning into aſhes without much ſmoke; bearing a very good poliſh; capable of being turned into a variety of ſhapes; and not colouring the hands.

Sp. IV. Culm coal; being of a black colour, with a gloſſy and ſomewhat metallic ſplendor; and burning into aſhes without much ſmoke.

Sp. V. Jet; being an inflamable, of a fine black colour; very light; reſembling wood in appearance; bearing an elegant poliſh; and of a ſolid ſtructure, but ſometimes having a grain like wood.

Sp. VI. Stone coal; being ſtoney; of a duſky blackiſh colour; and burning freely.

Claſs IV. Metals.

Ch. Foſſil bodies, which have an appearance, named metallic; bright and ſhining; perfectly opaque; and ſoluble in mineral acids, or in a combination of them, tho' the aſſiſtance of the chymiſt is often wanted for this purpoſe; and precipitated by alkali, from their ſolution in acids, in form of an earth, which, with inflammable ſubſtances, can be revived into a metallic appearance.

N. B. The aſcertainment of the genera of metals, as alſo of the genera of the next claſs, is left to chymical analyſis; and we refer the reader to the proceſſes, for this purpoſe delivered by chymiſts and metallurgiſts: we alſo refer him to any book of chymiſtry, if he is ignorant of the characters, by which are diſtinguiſhed the fourteen metals, viz. Gold, Silver, Platina, Iron, Copper, Lead, Tin, Arſnic, Zins, Antimony, Quickſilver, Cobalt, Bicmuth, and Nickell.

Genus I. Marcaſite.

Pyrites is a ſynonym of this genus.

Ch. A compound metal, conſiſting of one or more metals, and ſulphur; with the aſſiſtance of moiſture and air, ſpontaneouſly and readily decompounding into a metallic earth, and a metallic vitriolic ſalt; and ſtriking a purple colour, when kept moiſtened with the tincture of galls, and expoſed to the air a certain time.

N. B. If this character does not pleaſe the reader, I acquaint him, that the characters commonly given of Marcaſite are futile, and that a juſt character of marcaſite is a great deſideratum.

Marcaſites contain iron and ſulphur, or copper and ſulphur, or both iron and copper with ſulphur; they not unfrequently contain arſnic; alſo any other metal, lead excepted, along with iron, copper and ſulphur.

Sp. I. Of a cubic figure.

Ex. An individual, of a yellow colour; of the figure of a perfect cube; and very common in many places.

Sp. II. Of a pyramidal figure.

Ex. An individual, of a yellow colour, with a pyramid of four ſides. Ex. 2. An individual, of a yellow colour, with a pyramid of three ſides.

Sp. III. Of a columnar figure.

Ex. An individual, from Redruth, in Cornwal, of a yellow colour in the interior part; conſiſting of irregular thin longitudinal columns. Ex. 2. An individual, of a yellow colour; with a ſhort column of four ſides.

Sp. IV. The polygonal; having determinate ſides, which are various in number and figure; and neither of a pyramidal, columnar nor cubic figure.

Ex. An individual, of a yellow colour; and of large regular facets. Ex. 2. An individual, of a ſmall ſize; conſiſting of many ſides, which are diſtinct, tho' not regular; and of various colours, as yellow, purple, pink, green, &c. which frequently are very beautiful.

Sp. V. Of a figure, reſembling a wedge; and frequently with notched ſides.

Sp. VI. Conſiſting of ſmall regular planes, laid one above another.

Ex. An individual, of a yellow colour, conſiſting of thin laminæ, of a ſquare figure. Ex. 2.

2. An individual, conſiſting of ſmall tubercles, compoſed of little thin planes; of a yellow colour; and called bliſtered marcaſite. Ex. 3. An individual, of a yellow colour; of a cruſtated ſtructure; with a ſurface wrought over with concentric circular hollows. Ex. 4. An individual, agreeing with the laſt in all reſpects, but wrought over with cubical delineations. Ex. 5. An individual, conſiſting of little thin planes, compoſing a regular polygonal figure. Ex. 6. An individual, conſiſting of thin laminæ, compoſing a figure, which is almoſt a perfect pyramid.

Sp. 7. Of a yellow colour, and not belonging to any of the preceding ſpecies.

Ex. Individuals, of a yellow colour; of a globoſe ſhape; and of a ſtructure ſolid, or granulated, or fibrous.

Sp. VIII. Of a red colour, and not belonging to any of the ſix ſpecies, firſt enumerated.

Sp. IX. Of a blue colour, and not belonging to any of the ſix ſpecies, firſt enumerated.

Genus II. Gold.

Ch. We have already referred the reader to

Sp. III. Of a columnar figure.

Ex. An individual, from Redruth, in Cornwal, of a yellow colour in the interior part; conſiſting of irregular thin longitudinal columns. Ex. 2. An individual, of a yellow colour; with a ſhort column of four ſides.

Sp. IV. The polygonal; having determinate ſides, which are various in number and figure; and neither of a pyramidal, columnar nor cubic figure.

Ex. An individual, of a yellow colour; and of large regular facets. Ex. 2. An individual, of a ſmall ſize; conſiſting of many ſides, which are diſtinct, tho' not regular; and of various colours, as yellow, purple, pink, green, &c. which frequently are very beautiful.

Sp. V. Of a figure, reſembling a wedge; and frequently with notched ſides.

Sp. VI. Conſiſting of ſmall regular planes, laid one above another.

Ex. An individual, of a yellow colour, conſiſting of thin laminæ, of a ſquare figure. Ex.

2. An individual, conſiſting of ſmall tubercles, compoſed of little thin planes; of a yellow colour; and called bliſtered marcaſite. Ex. 3. An individual, of a yellow colour; of a cruſtated ſtructure; with a ſurface wrought over with concentric circular hollows. Ex. 4. An individual, agreeing with the laſt in all reſpects, but wrought over with cubical delineations. Ex. 5. An individual, conſiſting of little thin planes, compoſing a regular polygonal figure. Ex. 6. An individual, conſiſting of thin laminæ, compoſing a figure, which is almoſt a perfect pyramid.

Sp. 7. Of a yellow colour, and not belonging to any of the preceding ſpecies.

Ex. Individuals, of a yellow colour; of a globoſe ſhape; and of a ſtructure ſolid, or granulated, or fibrous.

Sp. VIII. Of a red colour, and not belonging to any of the ſix ſpecies, firſt enumerated.

Sp. IX. Of a blue colour, and not belonging to any of the ſix ſpecies, firſt enumerated.

Genus II. Gold.

Ch. We have already referred the reader to books of chymiſtry, if he wants to know the characters of the fourteen metals.

Sp. I. The native metal; not being mineralized by any other metal, nor by ſulphur.

It is found in different forms, in rude pieces, in grains, in plates, in filaments, and in ramifications; and ſometimes, tho' very rarely, in regular chryſtals.

N. B. We always make the native metal a diſtinct ſpecies, altho' it correſponds in colour with another ſpecies.

Sp. II. Of the unnamed colour of metals *.

Sp. III. Of a yellow colour.

This ſpecies reſembles pyrites, and is ſaid to be gold, mineralized by ſulphur.

Genus III. Silver.

Sp. I. The native metal.

It is found in various forms, in rude pieces, in plates of different kinds, in filaments, in ramifications, and in chryſtals.

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[*] See page ſix.

Sp. II. A ſilver ore, of great ſoftneſs, and cutting as eaſily as lead; and of different colours and forms.

We are led, by a very reſpectable authority, to form this ſpecies, according to the character we have above employed: but we believe, that the ſpecies does not accord with the principles of our ſyſtem, and that the different individuals belong to the other ſpecies of this genus. We ſhall enumerate certain individuals, mentioned by authors.

Ex. An individual, of a white colour. Ex. 2. An individual, of a green colour. Ex. 3. An individual, of the unnamed colour of metals. Ex. 4. An individual, of a yellow colour Ex. 5. Individuals, of a priſmatic figure: e. g. one individual, which is hexaedral. Ex. 6. Individuals, of a polygonal figure: e. g. one Individual, of the figure of chryſtals of alum.

Sp. III. Of a red colour.

This ſpecies generally is of a deep rich red colour; of a very gloſſy ſplendor; is found figured as well as unfigured; and is mineralized by arſnic.

Sp. IV. Of the unnamed colour of metals. The ſhades of this colour are different; ſometimes bright, at other times dull. The grey ſilver ore, or the minera argenti griſea often comes under this ſpecies.

Sp. V. Of a white colour.

There is an individual, mineralized with ſulphur, arſnic, copper, and iron; and frequently named grey ſilver ore.

Sp. V. Of a ſubſtance, of a ſooty black colour, along with a ſilver ore, of a metallic appearance; the ore, which has the metallic appearance, being of a red, of a white, or of the unnamed colour of metals, and belonging to theſe ſpecies.

Sp. VI. Of a black colour.

This ſpecies contains ſulphur.

Sp. VII. Of a fibrous ſtructure.

Ex. An individual, named the plumoſe ſilver ore, conſiſting of very fine filaments; gloſſy, and of a black colour; and mineralized by ſulphur and antimony. This individual probably belongs to the genus of antimony; but there are others, which cannot be referred to that genus.

Genus IV. Platina.

Sp. I. The native metal, being of a white colour; found in Peru, in the form of ſmall ſcales, which are ſeparate and looſe.

Genus V. Iron.

Sp. I. The native metal.

Doctor George Fordyce is in poſſeſſion of a ſpecimen, which, I believe, is the only one known certainly to be native iron.

Sp. II. Of a black colour.

It is of many different ſtructures; the granulated, the ſolid, the laminated, and the ſcaley. It is mineralized with ſulphur.

The individuals of a ſcaley ſtructure, are of two different kinds; one kind not rubbing into ſcales; the other kind very eaſily rubbing into ſcales, therefore called eiſenman; and theſe ſcales, in many individuals, are ſoft and unctuous.

Sp. III. Of the unnamed colour of metals.

This ſpecies is of many different ſtructures;

the granulated, the ſolid, one rather, tho' not properly, ſtriated, the laminated, and the ſcaley. The individuals of a ſcaley ſtructure, are of two different kinds; one kind [redacted] rubbing into ſcales, and therefore called eiſenman; and theſe ſcales in many individuals, are ſoft and unctuous. One individual of this ſpecies, by ſcraping, changes its colour into a red one.

Sp. IV. Of a red colour.

Ex. An individual, of a high red colour; of a metallic appearance; and found in Scotland, the Hartz, and other parts of Germany. Ex. 2. An individual, of a very gloſſy ſplendor, in many parts of a red colour, and in others of a green one; and found in the iſle of Elbe, on the coaſt of Tuſcany.

Sp. V. Of a blue colour.

Sp. VI. Of a fibrous ſtructure.

We call it metallic hematites. It is both of the red and the unnamed colour of metals: it frequently is compoſed of cruſts, laying one above another, which are ſtriated.

Sp. VII. Iron ſand.

It is found in granules, and in ſmall flakes, which are looſe, and often mixed with ſand, &c. and is of different colours, as black, red, and the unnamed colour of metals.

Sp. VIII. Manganeſe; conſiſting of a ſubſtance, which is of a black colour, and which tinges the hands, along with an ore of iron, of the ſpecies of the unnamed colour of metals; the ſtructure of this ore being various, as granulated, ſolid, ſquamous, and one kind ſomewhat, but not properly, ſtriated.

Manganeſe has all the appearance of being the ſpecies of the unnamed colour of metals, in part decompounded; when it is wholly decompounded, it is a cryptometalline earth.

Sp. IX. Emery, or ſmiris; being iron ore in ſmall pieces, mixed with micæ.

Sp. X. Of a form ſimilar to a wedge.

Ex. An individual, of the unnamed colour of metals; with a fine poliſh; with plates, edged and erect; and found on the iſland of Elbe, on the coaſt of Tuſcany. Ex. 2. An individual, to wit, the Engliſh; of a ruſty iron colour.

Sp. XI. The polygonal; having determinate ſides, which are not regular in number, figure, and colour.

Genus VI. Copper.

Sp. I. The native metal.

It is found in various forms, in rude pieces, in plates, in filaments, and in cubes.

Sp. II. Of the unnamed colour of metals.

This ſpecies commonly is named the grey, and the vitreous, or glaſs copper ore: the ſhades of this colour are various; being bright, dull, and ſometimes approaching to white. The individuals frequently are tarniſhed of different colours, but the colour of the ſpecies reappears on their being cut: they are mineralized with ſulphur, and often with iron.

Sp. III. Of a red colour.

Ex. An individual, of a fine gloſſy red colour; and found both in diſtinct figures, and in indeterminate pieces.

Sp. IV. Of a white colour.

Ex. An individual, of a white colour; known among ſome authors, by the name of grey copper ore.

Sp. V. Of a purple, or blue colour.

Ex. An individual, of a vivid purple colour, throwing out a fine luſtre, and often called by the name of peacock copper ore. Ex. 2. An individual, of a dull blue colour.

Sp. VI. Of a yellow colour.

The colour of this ſpecies generally is a very high one. There is an individual, ſomewhat of the colour of Biſmuth, mineralized by iron and ſulphur, and which is the liver-coloured copper ore of many authors. The individuals of this ſpecies, the liver coloured copper ore excepted, are referred by many foſſiliſts to the genus marcaſite.

Genus VII. Lead.

Sp. I. Native lead.

Sp. II. Of a laminated ſtructure.

Ex. An individual, named the potter's lead ore; compoſed of thin ſquare laminæ; mineralized with ſulphur; and containing a ſmall portion of ſilver. Ex. 2. An individual, of the unnamed colour of metals, compoſed of indeterminate ſcales; and mineralized by ſulphur.

Sp. III. Of a ſolid ſtructure.

Ex. An individual of a ſolid ſtructure, but conſiſting in appearance of little diſtinct pieces, which are very bright and glaring, when it is called ſtargrained lead ore; and of the unnamed colour of metals. Ex. 2. An individual, of a ſolid ſtructure; in the form of ramifications; of the unnamed colour of metals; and mineralized by ſulphur.

Sp. IV. Of a granulated ſtructure.

Ex. An individual of the unnamed colour of metals; and of a compact granulated ſtructure; and mineralized by ſulphur.

Sp. V. Of a fibrous ſtructure.

It is mineralized with ſulphur, and antimony, and contains ſome ſilver.

Sp. VI. Of a pyramidal figure.

Ex. An individual, of the unnamed colour of metals; being a detruncated pyramid of four ſides and mineralized by ſulphur.

Sp. VII. Of a cubic figure.

Genus. VIII. Tin.

Sp. I. The native metal.

There is great reaſon to ſuſpect that the ſpecimen offered of native tin, is artificial.

Sp II. and III. Very probably come under order III. of claſs V.

Sp. II. Of a black colour. This always is very gloſſy; and is mineralized with arſnic.

Ex. An individual of a granulated ſtructure. Ex. 2. An individual of a ſolid ſtructure. Ex. 3. An individual with minute fibres.

Sp. III. Tin ſands; being granules of the foregoing ſpecies, blended with ſand and other kinds of granules.

Genus IX. Arſnic.

Sp. I. The native metal.

It ſoon becomes black in the air: it ſometimes is of a ſcaly and kidney-like ſtructure; and frequently is called the Scherbencobalt.

Sp. Of

Sp. II. Of a white colour.

It is named mispickel; and is found in various forms, in rude pieces, and in both regular and irregular figures; and is mineralized by iron. It is alſo found of a white colour and mineralized with ſulphur.

Genus X. Zinc.

Sp. I. Of a black colour.

Its colour is always glaring; it is called blende and black jack by many authors; and is mineralized by ſulphur, and often contains iron.

Ex. An individual of a ſolid ſtructure; of a very glaring black colour; and formed into irregular facets. Ex. 2. An individual of a gloſſy black colour; conſiſting of large irregular plates, ſomewhat like potter's lead.

Sp. II. Of the unnamed colour of metals.

Sp. III. Of a white colour.

Ex. An individual, conſiſting of thin laminæ; of a gloſſy ſilver colour; colouring the hands like black lead.

Genus

Genus XI. Antimony.

Sp. I. The native metal. It is of a white or ſilver colour.

Sp. II. Of a fibrous ſtructure.

It is mineralized by ſulphur. Ex. An individual, of the unnamed colour of metals; gloſſy; and compoſed of fine needles. Ex. 2. An individual, named the plumoſe, compoſed of very fine hairs; and of a deep ſhade of the unnamed colour of metals. Ex. 3. An individual, of the unnamed colour of metals; gloſſy; and with ſtriæ flat and depreſſed.

Sp. III. Of a ſolid ſtructure.

Ex. An individual, of the unnamed colour of metals, and of a very dull appearance, and mineralized by ſulphur.

Sp. IV. Of a granulated ſtructure.

Ex. An individual, of the unnamed colour of metals, and mineralized by ſulphur.

Sp. V. Of a laminated ſtructure.

Ex. An individual of the unnamed colour of metals, and mineralized by ſulphur.

Genus XII. Quick-ſilver or hydrargyrum.

Sp. I. The native metal.

Granules of native quick-ſilver, are found interſperſed in various ſubſtances; ſometimes ſmall cavities in foſſil bodies are filled with this metal; ſometimes the native metal is not viſible, until it is preſſed out from the bodies, in which it is contained.

Sp. II. An amalgam of quick-ſilver, and ſilver.

Genus XIII. Cobalt.

Sp. I. Of a white colour.

It is mineralized by arſnic.

Genus XIV. Biſmuth.

Sp. I. The native metal.

It is found in grains, flakes, and cruſts, and is of a yellowiſh colour.

Sp. II. Of a blue, or purple colour: This ſpecies ſeems to be the ſame with the foregoing, and to owe its colour to ſomething accidental.

Sp. III. Of a white colour.

Ex. An individual, of a white colour; interſperſed in the form of delineations, through a ſtone of a brown colour, and of a ſolid texture.

Sp. IV. Of a laminated ſtructure.

Ex. An individual, in colour like a groſs potter's ore; compoſed of thin ſquare ſcales; and mineralized with arſnic and cobalt. Ex. 2. An individual, compoſed of large ſcales, of a pyramidal figure; and mineralized with ſulphur and iron.

Genus XV. Nickell.

Sp. I. The native metal.

Sp. II. Of a yellow colour.

It is ſaid to be mineralized by arſnic, ſulphur, iron, and copper.

Genus XVI. Molybdæna, or black lead.

Ch. Deſideratur.

Sp. I. Of the unnamed colour of metals; this colour appearing, when this ſpecies of molybdæna is freſh cut.

Ex. An individual, gloſſy and ſhining; of the unnamed colour of metals; tinging the hands; and found at Keſwick, in Cumberland.

Sp. II. Of a laminated ſtructure.

Ex. An individual, conſiſting of large plates, which are diviſible, flexible, and very unctuous; and found in America, and at Altenburg, in Saxony.

Claſs V. Cryptometalline Foſſils.

Ch. Foſſil bodies, having no appearance of metals, yet containing them in ſuch a quantity, that they may be called metallic bodies, or ores of metals.

Many objections may ariſe againſt the eſtabliſhment of this claſs, and the orders into which it is divided; as many as I am acquainted with, I have maturely weighed, and find almoſt all of them no more valid than ropes of ſand. A ſtrong objection lies againſt our ſeparating bodies, partaking of the ſame metal, into three different orders; but method, to which nature, for the ſake of advantage, is, in foſſilogy, to be ſacrificed, required this; nor can any inconvenience enſue, if the young foſſiliſt will firſt read the characters of the orders, and afterwards proceed with one metal through its ſeveral genera, in the different orders of this claſs, before he inveſtigates another.

Order I. Cryptometalline ſtone.

Ch. Cryptometalline foſſils, whoſe component parts do not imbibe water; and which fall not into a looſe maſs, nor, when gently rubbed between the fingers, are diviſible, after they have been ſoaked a ſufficient time in water; not figured, nor ſhining and gloſſy, nor tranſparent.

N. B. The calces of metals, when theſe are ſpontaneouſly decompounded, frequently anſwer to the above character; they neither imbibing water, nor falling into a looſe maſs, nor being properly diviſible, by gentle rubbing between the fingers, after they have laid for ſome time in water: nor can they be conſidered in a falſe light, by then arranging them under this order, which is our deſign. The individuals of this order, for the moſt part, are either calces, or have the common appearance of ſtones, of a cloſe compact ſtructure.

Genus I. Iron ſtone.

Sp. I. Of a red colour.

Ex. An individual, named ruddle.

Sp. II. Of a brown colour.

Sp. III. Of a black colour.

Sp. IV. Of a fibrous ſtructure.

We call this ſpecies ſtone hematites.

Sp. V. Of a cruſtrated ſtructure.

The individuals of this ſpecies are numerous; they are of a brown, of a red, and of a yellow colour. There are ſmall round iron ſtones of this ſtructure; ſuch are bezoar mineral, and the pea-like iron ore. Iron incruſtations on ſhells, and other ſubſtances are frequently found on the coaſts.

Genus II. Copper ſtone.

Sp. I. Of a blue colour.

Ex. An individual, which is a calx, and not an earth, or ochre.

Sp. II. Of a green colour.

Ex. An individual, which is a green calx, and frequently found on the outſide of copper ores.

Sp. III. Of a black colour.

Ex. An individual, which is lodged in, and combined with a ſoft ſlate, conſiſting of very thin laminæ; of a blackiſh colour; and found in the Dutchy of Brunſwic. Ex. 2. An individual, being a hard and compact ſlate; of a black colour; and found in Iſleb, and other parts of Germany.

Sp. IV. Of a brown colour.

Sp. V. Of a red colour.

Ex. An individual, which is a calx, of a glaſs copper ore; found in the province of Dal, and at Oſtanberg, in the province of Dalarn. Cronſted.

Genus III. Lead ſtone.

Sp. I. Of a green colour.

Sp. II. Of a white colour.
Sp. III. Of a red colour.
Sp. IV. Of a brown colour.
Sp. V. Of a blue colour.
Sp. VI. Of a yellow colour.
Sp. VII. Of a black colour.

Genus IV. Tin ſtone.

The ſpecies generally are eſtabliſhed from ſpecimens of ſhoads, boulders, &c. and are mineralized with arſnic.

Sp. I. Of a blue colour.
Sp. II. Of a brown colour.

Genus V. Antimony ſtone.

Sp. I. Of a fibrous ſtructure.

Ex. An individual, of a red colour; and mineralized by arſnic.

Genus VI. Zinc ſtone.

Sp. I. Of a yellow colour.

Ex. An individual named calamine.

Sp. II. Of a red colour.

Ex. An individual named calamine.

Sp. III. Of a brown colour.

Ex. An individual named calamine.

Sp. IV. Of a green colour.

Ex. An individual named calamine.

Genus VII. Quickſilver ſtone.

Quickſilver in its cryptometalline ſtate is mineralized with ſulphur; and commonly is called cinnabar.

Sp. I. Of a red colour.

Ex An individual, of a ſcarlet colour; of a ſolid and pretty compact texture; the moſt common of the cinnabars.

Sp. II. Of a black colour.

Sp. III. Of a yellow colour.

Genus VIII. Cobalt ſtone.

Sp. I. Of a red colour.

Ex. An individual, of a red colour; being a calx; and found on the ſurfaces of cobalt ores; and mineralized with arſnic. Ex. 2. An individual of a pink colour, being a calx.

Sp. II. Of a blue colour.

Sp. III. Of a black colour.

Ex. An individual, which is a calx. Ex. 2. An individual hard and ſtoney, and of a black colour.

Sp. IV. Of a green colour.

Sp. V. Of a yellow colour.

Sp. VI. Of a brown colour.

Ex. An individual which is a calx.

Sp. VII. Of a white colour.

Genus IX. Nickel ſtone.

Sp. I. Of a green colour.

It is found in a powder, and in a concrete form; and probably is a cryptometalline ſtone; being a calx, and not an earth.

Genus X. Arſnic ſtone.

Sp. I. Of a black colour.

Ex. An individual, which is a calx, and found on native arſnic.

Order II. Cryptometalline earth.

Ch. Cryptometalline foſſils, whoſe component parts imbibe water; and which either fall down into a looſe maſs, or, when gently rubbed between the fingers, are diviſible, after they have been ſoaked a ſufficient time in water.

Cryptometalline earth, which is of an elegant colour, and tinges the hands, is called ochre.

Genus I. Silver earth.

There are many ſpecies of ſilver Cryptometalline earths, but they are not accurately noted.

Sp. I. Of a yellow colour.

Ex. An individual named the ſtercus anſerinum from its reſemblance to this ſubſtance.

Genus II. Iron earth.

Sp. I. Of a black colour.

Ex. An individual, being a black ſooty ochre, and formed by the perfect decompoſition of the manganeſe, which is a ſpecies of the metal iron.

Sp. II. Of a red colour.

Ex. An individual, which is an ochre. Ex. II. An individual, of a fine red colour; ſo ſoft, as to be kneaded like clay; very greaſy and unctuous; colouring the hands; found chiefly in the mines of Cumberland, and called the Smit.

Sp. III. Of a brown colour.

Ex. An individual, which is an ochre.

Sp. IV. Of a blue colour.

Ex. An individual, which is an ochre.

Genus III. Copper earth.

Sp. I. Of a yellow colour.

Sp. II. Of a grey colour.

Sp. III. Of a brown colour.

Sp. IV. Of a green colour.

Ex. An individual, which is an ochre.

Genus IV. Lead earth.

Sp. I. Of a white colour.

Ex. An individual, named the native Ceruſs.

Sp. II. Of a yellow colour.

Ex. An individual, which is an ochre. Ex. 2. An individual, named the maſticot.

Sp. III. Of a brown colour.

Ex. An individual, which is an ochre.

Sp. IV. Of a red colour.

Genus VI. Quickſilver Earth.

Sp. I. Of a red colour.

Ex. An individual, being lodged in and combined with a clay; and of a red colour.

Sp. II. Of a blue colour.

Sp. III. Of a white colour.

Genus VII. Cobalt earth.

Sp. I. Of a blue colour.

Ex. An individual, being lodged in and combined with a blue clay; and found in Wermerland in Sweden.

Sp. II. Of a red colour.

Ex. An individual, named cobalt bloom, being an ochre; and found in a looſe or friable form.

Sp. III. Of a black colour.

Ex. An individual, being lodged in and combined with a black clay, and found in the Dutchy of Wurtemburg.

Sp. IV. Of a yellow colour.

Ex. An individual of a white colour; light, ſoft, and in the form of clots; found in the Dutchy of Wurtemburg; and generally with a green glance on the ſurface.

Genus VIII. Tin earths.

Genus IX. Arſnic earth.

Sp. I. Of a white colour.

Ex. An individual of a white colour; in a looſe form like floor: and which I imagine to anſwer to the characters of a cryptometalline earth.

Order III. Cryptometalline flos.

Ch. Cryptometalline foſſils, which are tranſparent or ſubtranſparent; or which reſemble ſpar chryſtal or pure fluor of any kind; or which are figured or nearly ſo; or which have a perfectly gloſſy ſhining appearance; the name of flos being applicable to any one of theſe ſtates.

Genus I. Silver flos, or flos argenti.

Sp. I. Of a red colour.

Ex. An individual, which is tranſparent, of a very gloſſy ſplendor; of a red colour; and mineralized with arſnic.

Sp. II. Horn ſilver ore, or minera argenti cornea; being a compound of ſilver and the muriatic acid; frequently ſemi-tranſparent, and having a reſemblance to horn.

This ſpecies is ſaid to be without the foſſilogical character of ſalts; and is of various colours, as whitiſh, greeniſh, red, brown, and purple.

Genus II. Iron flos or flos ferri proprius.

Sp. I. Of a red colour.

Ex. An individual, very gloſſy; of a laminated ſtructure; and mineralized with arſnic.

Sp. II. Of a brown colour.

Ex. An individual, of a brown colour, very gloſſy, of a laminated ſtructure; and mineralized with arſnic.

Sp. III. Of a grey colour.

Ex. An individual, of a greyiſh colour; very gloſſy; of a laminated ſtructure; and mineralized with arſnic.

Sp. IV. Of a black colour.

Ex. An individual, of a black colour; of a laminated ſtructure; very gloſſy; and almoſt of a metallic appearance.

Sp. V. Of a fibrous ſtructure.

This ſpecies we call flos hematites.

Ex. An individual, very gloſſy, but opaque; of a black colour; and compoſed of cruſts, which are ſtriated, lying one above another.

Sp. VI. Of a columnar figure.

There is one particular individual, conſiſting of rude irregular columns, which lie parallel; called bruſh iron ore; and found in the foreſt of Dean. The individuals of this ſpecies frequently have pretty regular columns, and a degree of tranſparency.

Genus III. Copper-flos, or flos cupri.

Sp. I. Of a green colour.

Ex. An individual, named Malachites; hard and compact; admitting a fine poliſh; gloſſy; and of an elegant green colour. Ex. 2. An individual, in the form of knobs or buttons, whence it is named; of a ſtriated ſtructure, the ſtriæ proceeding from the center to the circumference; gloſſy like ſilk; and of a very elegant appearance.

Sp. II. Of a blue colour.

Ex. An individual, known by the name of the lapis lazuli; which is ſaid likewiſe to contain ſilver.

Sp. III. Of a red colour.

Ex. An individual, of a red colour; on account of its colour called ſealingwax copper ore; and of a gloſſy appearance.

Genus IV. Lead flos, or flos plumbi.

Sp. I. Colourleſs.

Ex. An individual, of a rhombic figure, or breaking into rhombs. Ex. 2. An individual, in regular oblong planes. Ex. 3. An individual, of a laminated ſtructure, and found in the Hartz.

Sp. II. Of a white colour.

Ex. An individual, of a white colour, and compoſed of lamellæ, after the manner of the plated fluors.

Sp. III. Of a green colour.

Ex. An individual, of a green colour; of a gloſſy appearance, and ſomewhat tranſparent; and mineralized with arſnic.

Sp. IV. Of a columnar figure.

Many individuals of this ſpecies have no regular ſides.

Ex. An individual, of a white colour, with a column of ſix ſides. Ex. 2. An individual, compoſed of capillary columns, or needles. Ex. 3. An individual, conſiſting of ſhort columns; of a green colour, and tranſparent; frequently having a red calx upon its ſurface; and mineralized with arſnic.

Genus V. Tin flos, or flos ſtanni.

The ſpecies have a gloſſy appearance; and are frequently found in different kinds of figures: ſome of the ſpecies are tranſparent, and others are opaque; the individuals are mineralized with arſnic.

Sp. I. Of a black colour.

This ſpecies is very frequent; the individuals are found in chryſtalized forms, and unfigured, of a ſolid, a granulated, and a fibrous ſtructure, and in the form of ſands.

Sp. II. Of a red colour.

Sp. III. Of a brown colour.

Sp. IV. Of a white colour.

Ex. An individual, the quartzoze; being ſemitranſparent, and exactly like unfigured quartzoze chryſtal; and found at Toeplitz, in Bohemia.

Genus VI. Flos arſenici, or arſnic-flos.

Sp. I. Of a white colour.

Ex. An individual, of a white colour, and tranſparent as glaſs; and found in the Hartz, and in Saxony.

Sp. II. Of a red colour.

It is mineralized with ſulphur; called realgar or ſandarack; and is always gloſſy, but not always tranſparent.

Sp. III. Of a yellow colour.

Ex. An individual, of a bright and beautiful yellow colour; and of a ſcaly ſtructure; and named orpiment.

Genus VII. Quickſilver flos, or flos argenti vivi.

Sp. I. Of a red colour.

Ex. An individual, of an high red colour; with ſmall plates, which are gloſſy, and tranſparent. Ex. 2. An individual, of a red colour; very gloſſy; and of a pyramidal figure.

Genus VIII. Zincflos, or flos zinci.

Sp. I. Of a yellow colour.

Ex. An individual, of a yellow colour, like wax; tranſparent, or gloſſy; of a ſolid ſtructure, and compact; and being one of the calamines. Ex. 2. An individual, of a yellow colour, and very gloſſy; of a ſcaly ſtructure; and mineralized by ſulphur; and often contains iron.

Sp. II. Of a red colour.

Ex. An individual, of a red colour, and a ſcaly ſtructure; and mineralized by ſulphur; and often contains iron.

Sp. III. Of a brown colour.

Ex. An individual, named the philemot, of a ruſſet colour; of a ſcaly texture; and mineralized by ſulphur; and often contains iron.

Sp. IV. Of a black colour.

Ex. An individual, of a black colour; ſhining and gloſſy; and of a ſcaly ſtructure.

Sp. V. Of a green colour.

Sp. VI. Of a white colour.

Sp. VII. Figured flos Zinci.

This ſpecies is found at Holywell, in Flintſhire; and is of a brown colour.

Ex. An individual, of a pyramidal figure, tho' it is not a very regular one. Ex. 2. An individual, in the form of oblong planes. Ex. 3. An individual, of a globular ſhape, exteriorly formed into ſeveral determinate ſides.

Genus IX. Cobalt-flos, or flos cobalti.

Sp. I. Of a red colour.

Ex. An individual, in the form of plates; of a red colour; and tranſparent. Ex. 2. An individual, named cobalt blood; of an elegant red colour; of a fibrous ſtructure, conſiſting of fine capilli.

Genus X. Baſaltes, or ſhirl, or cockle.

Character deſideratur.

It is mineralized with iron and other metals.

Sp. I. Of a ſolid texture.

Sp. II. Of a fibrous ſtructure.

The individuals are of a black, green, and a white colour; the fibres being in various directions.

Sp. III. Of a granulated ſtructure.
Sp. IV. Of a laminated ſtructure.

Sp. V. Of a columnar figure.

Ex. Individuals, of irregular ſides, and of different colours, as black, green, or brown.

Sp. VI. Of a pyramidal figure.

Sp. VII. Of a columnar, and pyramidal figure.

Ex. An individual, of a black colour, and gloſſy; conſiſting of a column of ſix ſides, and a pyramid of three.

Claſs VI. Salts.

Ch. Foſſil bodies, which are ſoluble in water; and which have taſte.

Ordo I. Acids.

Ch. Salts, which have a ſour taſte, and which change the purple juices of vegetables into a red colour.

Genus I. Vitriolic acid.

Ch. An acid, decompounding calcareous abſorbent earth, combined with any other acid, and forming therewith gypſum.

Sp. I. In a fluid form.

Order II. Alkalies.

Ch. Salts, of a peculiar taſte, and changing the purple juices of vegetables into a green colour.

Genus I. Foſſil alkali.

Ch. An alkali, readily ſhooting into chryſtals of a rhombic form.

Sp. I. The natron; being found in cruſts upon the waters of a lake in Egypt, and upon the walls of old buildings.

Sp. II. Of a yellowiſh brown colour; found in the form of a powder, on the banks of the river Hermus, nigh Smyrna, where it is made into a fine ſoap.

Genus II. Volatile alkali.

Ch. An alkali, of a pungent ſmell, and which wholy ſublimes in no great degree of heat; and which readily ſtrikes a blue colour, with a ſalt of copper.

"Volatile alkali is diſcovered, not only in moſt parts of the clays, but likewiſe in the ſublimations at Solfatara, near Naples." Cronſted.

Order III. Metallic neutral ſalts, or neutral ſalts, conſiſting of an acid and a metal.

Ch. Neutral ſalts, which in ſolution, ſtrike a purple colour, with a tincture of galls; and, on the addition of an alkali, let fall on earth, which with proper inflamable ſubſtances, can be revived into a metal.

N. B. Metallic neutral ſalts are ſometimes blended together, but one ſalt or other is then found in a greater quantity, and points out the genus, in which they are to be arranged.

Genus I. A neutral ſalt of copper, and the vitriolic acid: or blue vitriol.

Ch. A metallic neutral ſalt, of a blue colour; the ſmalleſt portion of it diſſolved in water, ſtriking a blue colour with volatile alkali; and the acid being precipitated in an inſoluble ſalt, along with lead, when a ſalt, conſiſting of lead, and any other acid is added to the ſolution.

Sp. I. Unfigured, and of a blue colour.

Sp. II. A ſtalactite.

Sp. III. Vitriolic earths, of different colours.

Sp. IV. Vitriolic ſtones, of different colours.

Sp. V. Contained in mineral waters.

Genus II. A neutral ſalt of copper, and the muriatic acid.

Ch. A metallic neutral ſalt, the ſmalleſt portion thereof diſſolved in water, ſtriking a blue colour, with volatile alkali; and the muriatic acid, being precipitated in an inſoluble ſalt, along with ſilver, when a ſalt, conſiſting of ſilver, and any other acid is added to the ſolution of this ſalt in water.

Sp. I. Contained in mineral waters.

Genus III. A neutral ſalt of iron, and the vitriolic acid: or green vitriol.

Ch. A metallic neutral ſalt, of a green colour; ſtriking a deep purple colour, with an infuſion of galls; and a ſalt, which is a compound of the vitriolic acid and lead, and inſoluble in water, being precipitated on the addition of a ſalt, conſiſting of lead, and any other acid.

Sp· I. Unfigured, and of a green colour,

Sp. II. A ſtalactite.

Sp. III. Vitriolic earths; being of different colours.

Sp. IV. Vitriolic ſtones; being of different colours.

Sp. V. Of a fibrous ſtructure.

Ex. An individual, which is like flocks of wool.

Genus IV. A neutral ſalt of iron, and the muriatic acid.

Ch. A metallic neutral ſalt, ſtriking a deep purple colour, with an inſuſion of galls; and a ſalt, which is a compound of the muriatic acid and ſilver, and inſoluble in water, being precipitated on the addition of a ſalt of ſilver, and any other acid.

Sp. I. Contained in mineral waters.

Genus V. A ſalt of vitriolic acid and zinc.

Ch. A metallic neutral ſalt, which in ſolution is precipitated by the vegetable alkali, of a white colour; the precipitate, when melted with a little copper, and ſome inflamable ſubſtance, forms braſs; and a ſalt, which is a compound of the vitriolic acid and lead, and inſoluble in water,

water, is precipitated on the addition of a ſalt, conſiſting of lead, and any other acid.

Sp. I. Colourleſs.

Sp. II. Of a white colour.

Sp. III. Of a red colour.

Sp. IV. A ſtalactite.

Sp. V. Contained in mineral waters.

Genus VI. A neutral ſalt of nickell, and the vitriolic acid.

Genus VII. A neutral ſalt of Nickell, and the muriatic acid.

A query ariſes, whether this genus exiſts.

Genus VIII. A neutral ſalt of quickſilver, and the muriatic acid.

Genus IX. A neutral ſalt of quickſilver, and the vitriolic acid.

Ordo IV. Earthy neutral ſalts.

Ch. Neutral ſalts, which are compoſed of an acid, and an earth; whoſe earth is precipitated on the addition of any mild alkali; and which ſtrike not a purple colour with the tincture of galls.

Genus I. A neutral ſalt, conſiſting of the vitriolic acid, and a calcareous earth; or gypſum.

Ch. Neutral ſalt, whoſe earth is precipitated by a mild alkali, but not by the cauſtic volatile alkali.

Sp. I. In a ſolid form; in which ſtate we have conſidered it as a ſtone; its character of a ſalt not being ſufficiently apparent.

Sp. II. Contained in mineral water, and in common water.

Genus II. A neutral ſalt, conſiſting of magneſia, and the vitriolic acid.

Ch. A neutral ſalt, whoſe earth is precipitated by cauſtic volatile alkali.

Sp. I. Contained in the ſea, and in mineral waters.

Sp. II. In a ſolid form.

Genus III. Common alum.

Ch. A neutral ſalt, conſiſting of the vitriolic acid, and a clayey earth; and changing the purple juices of vegetables into a red colour.

Sp. I. Unfigured.

Sp. II. Of a fibrous ſtructure; being plumoſe, or feather-like.

Sp. III. Aluminous ſtones.

Sp. IV. Aluminous earths; being clays, and earths of different kinds.

Order V. Alkaline neutral ſalts; or neutral ſalts, conſiſting of an acid and alkali.

Ch. Neutral ſalts, which are not decompounded by mild volatile alkali, added to their ſolution.

Genus I. Sal glauberi.

Ch. An alkaline neutral ſalt, whoſe chryſtals are hexaedral, and contain a great portion of water, ſpontaneouſly calcining in the open air; and which is compoſed of the vitriolic acid, and of foſſil alkali.

Sp. I. Contained in mineral waters.

Genus II. Common ſalt.

Ch. An alkaline neutral ſalt, decrepitating in the fire; its chryſtals being of a cubic form; and compoſed of the muriatic acid and foſſil alkali; and its acid ariſing in white fumes, on mixing with the dry ſalt concentrated vitriolic acid.

It is generally found in large bulks, in the bowels of the earth, when it is called rockſalt; and generally is tranſparent.

Sp. I. Colourleſs.

Sp. II. Of a red colour.

Sp. III. Of a white colour.

Sp. IV. Of a blue colour.

Sp. V. Of a yellow colour.

Sp. VI. Of a ſtriated ſtructure.

Sp. VII. Contained in the ſea, and in mineral waters.

Genus III. Common ſal ammoniac.

Ch. An alkaline neutral ſalt, compoſed of muriatic acid, and volatile alkali; volatile in a ſmall degree of heat; whoſe alkali is extricated in pungent vapours, on the admixture of quicklime; and whoſe acid is extricated in white fumes, on pouring concentrated vitriolic acid upon it.

Sp. I. Of a white colour.

Sp. II. Of a red colour.

Sp. III. Contained in mineral waters.

Sp. IV. Sublimed from volcanoes, of various colours, as white, red, green, black; and being generally very impure, containing ſulphur, &c.

Genus V. A neutral ſalt, conſiſting of foſſil alkali, and the nitrous acid: or cubic nitre.

Ch. An alkaline neutral ſalt, which in fuſion detonates on the addition of an ignited inflammable ſubſtance; and when deflagrated with ſulphur, leaves Glauber's ſalt.

FINIS.